

HiWayCAD 3 Introduction

2019-8-5

HiWayCAD is aimed at Internet based online basic CAD ([Computer Aid Design](#)) application. In compare with traditional desktop version, the online solution could be much smarter, more powerful than ever. In fact, it could lead a revolutionary changes on the CAD industry line.

This is not a well down version, not even an evaluation version, this is just a development version to show any potential and targets. Due to all spare time work, and almost individual development, the progress could not be amazing fast.

HiWayCAD history:

1. **HiWayCAD 1:** A desktop [Windows Form](#) CAD app. It was developed between year 2001 and 2008. Due to IT Go Networking trend, it was stopped
2. **HiWayCAD 2:** A [SilverLight](#) based web form app. Till now [SilverLight](#) is still the best platform for a online CAD. Unfortunately it was discontinued on year 2011 – 2012
3. **HiWayCAD 3:** A [HTML5](#) based web form app. Designated to replace **HiWayCAD 2** - the [SilverLight](#) version

HiWayCAD 3 is going to inherit all smart idea and spotlights from the previous version. For some examples:

1. Color gradient trace line
2. Remember able dialog boxes for parameter definition with possible preview and smart user interface
3. Feature indicator cursors
4. Voice command / prompt
5. Material / Element bounded shapes
6. Database based data storage
7. Online help is the same as online document

Depending on usage, **HiWayCAD 3** implement both of HTML5 [Canvas](#) and [SVG](#) graphics. [Canvas](#) is supposed to be implemented as the major draw board, while [SVG](#) is mainly used on dialog box preview and all static images.

Due to implement material / element webservice, **HiWayCAD 3** would be able to realize Train Services in the way of planning, design, develop, release, budget, construction organize...- all-in-one!

Due to the web basis, **HiWayCAD 3** would be able to realize Paperless Engineering. Currently any brand RV glasses are quite popular and low-cost. Together with projector like displayer, construction industry might enter in a totally newer area.

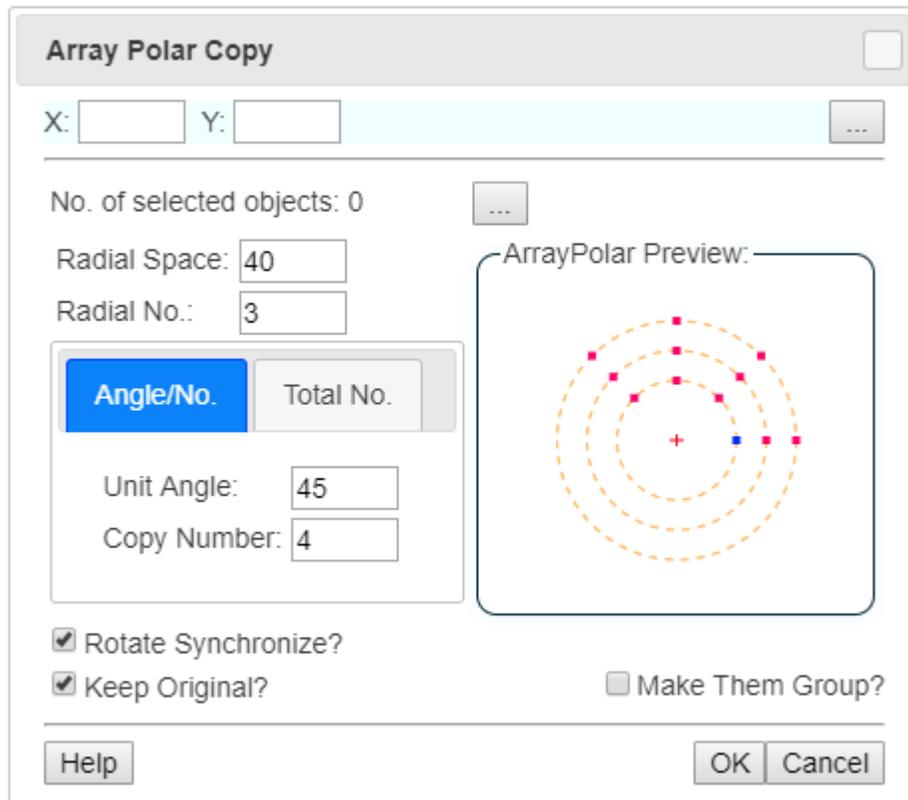
User interface design is aimed at modern and more user friendly:

1. Metro menu: Responsive design, enable some DOMs built in the main menu to enrich the functions, like text box and radio button...
2. Docking windows:
 - a. Left side: App settings and possible shortcuts of the main menu

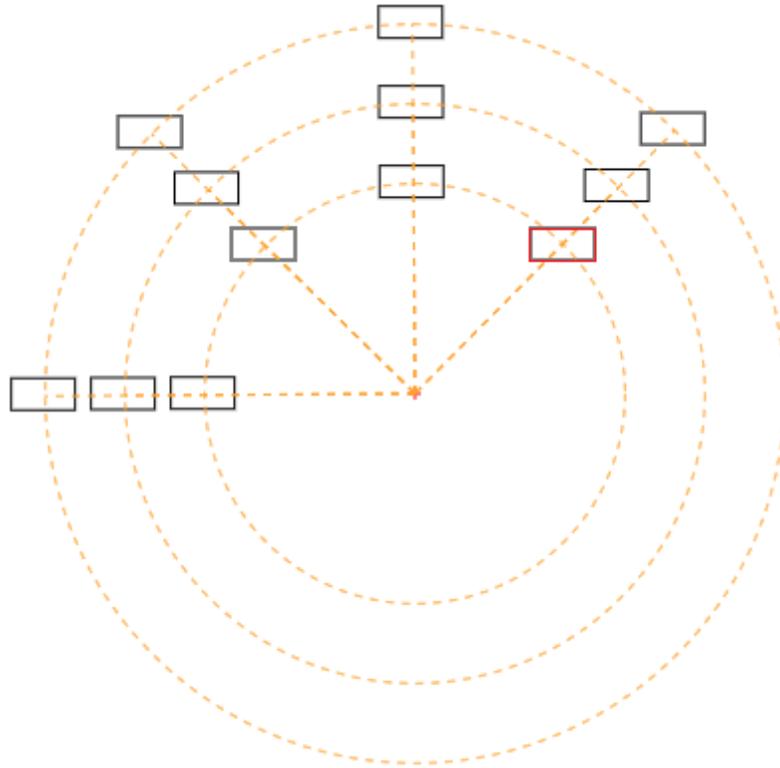
- b. Right side: Property window: If a single shape, this window will display all detail attributes. Changing any attribute will apply the shape right way. In the future version, it might be consider to build an online chart to allow remote group design and tutorial
- c. Top side: The material / Element definition. This could be part of a shape defined either in the layer or property to enable statistics like for example budget; Bulk cargo like masonry, pouring concrete are material. While shaped ones like door, window, pillar, beam, prestressed concrete slab are considered as finished element
- d. Bottom side: Served as layer manager. The layers can be organized by group

All docking windows should be able to be closed and able to be moved to other monitor.

Following screenshot is a sample dialog box on array polar multiple copy: A dialog box starts up with default definition or last changes. Here the preview schematic diagram shows the logic. The blue object is the copy original; all other red objects are to be copied. The copy original can be multiple objects.

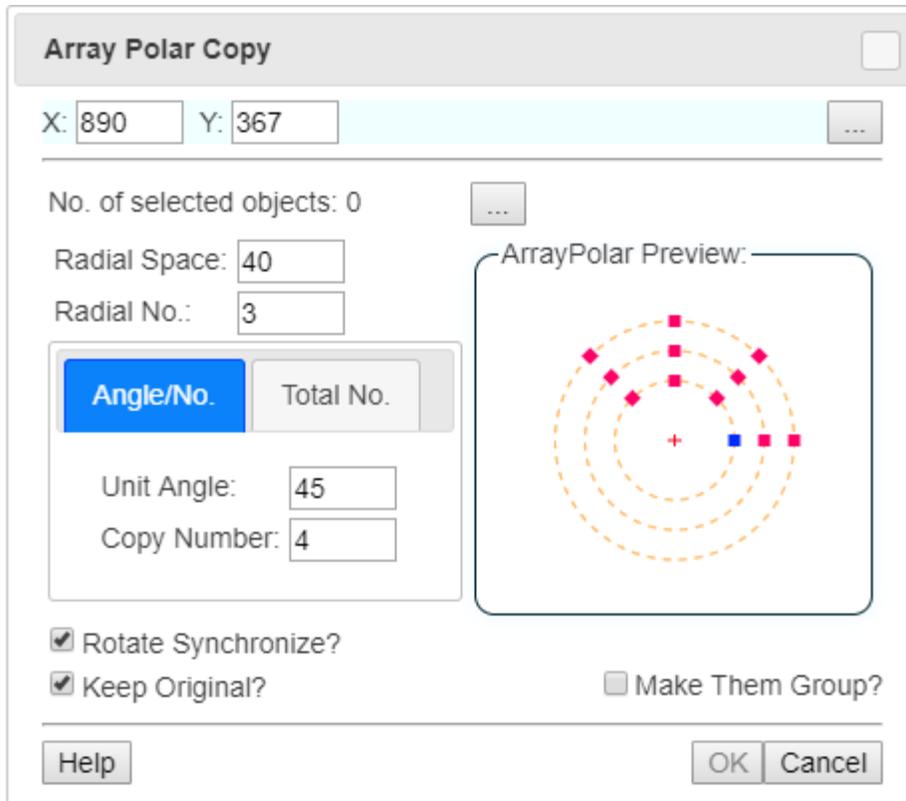


If the parameter list is not complete, the OK button will be disabled. Following screenshot shows the result:

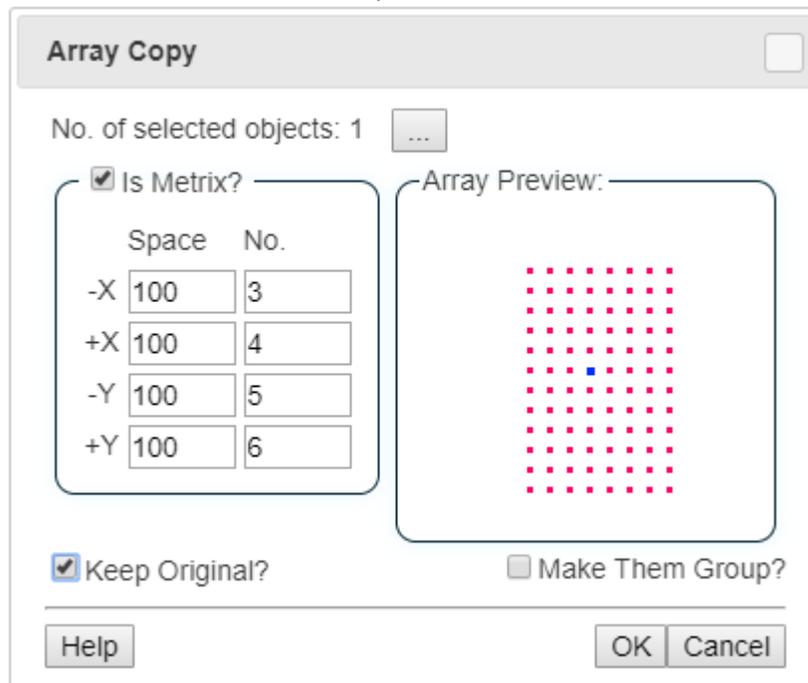


The yellow color dotted lines are auxiliary lines. According to settings, they will be cleared after a little while. Or user can refresh screen to clear them right way. If the draw is not as expected, user can Undo the action, repeat the dialog box and only few modifications can make a new set of draw.

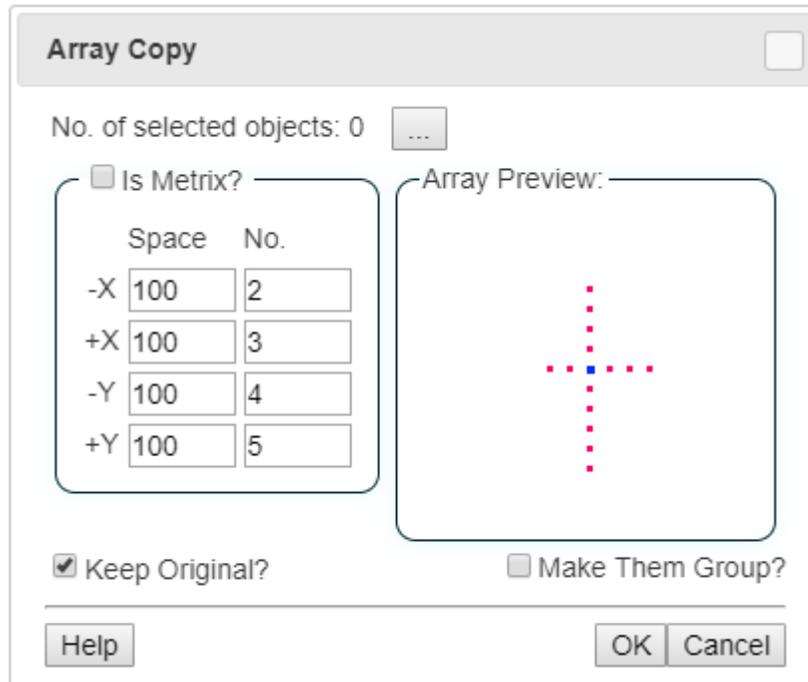
If user wants a centripetal direction, just tick off the box **Rotate Synchronize**. A sample looks like following screenshot:



Same idea applies in Array Copy. Like following screenshot, the copy number both in horizontal and vertical both forward and backward, are all vividly visualized:



It can be also linear copy:



Same idea applied in all features. Following screenshot shows up the polygon and image input definition as well as grid definition dialog box:

Polygon Definition

X: Y:

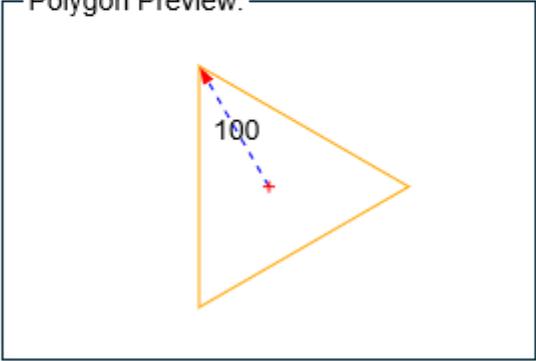
Material:

Side Number:

Fill:

Polygon Radius:

Polygon Preview:



Plain Text Input

X: Y:

Image file URL:

Image Preview:



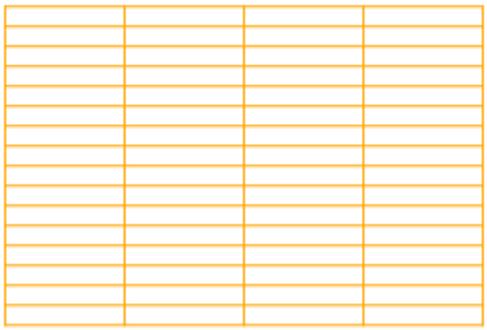
Grid Definition

X: Y:

Grid Row:

Grid Column:

Grid Preview:



This **HiWayCAD** version is a web browser based 2D-3D general purpose CAD (Computer Aid Design) application, built in English interface only. In the future, it will be extended to multiple language interfaces.

The basic version will be served public as free online app. This should be a full version, but might be limited by size due to resources consumption. An unlimited version will be ready for registered user. When user login, there will be no advertisement and registered user will be provided some kind of technique services.

Basic browser version requirement:

- **HTML 5**: If your browser does not support **HTML 5**, update or change to other browser
- **CSS3**: Without this support some cool effects cannot be realized

Basic browser settings supporting requirement:

- *JavaScript* + *jQuery*: Served as logic and event support
- Cookies: Storage of machine wise **HiWayCAD** environment settings like language, unit, format

HiWayCAD can be run under either online or offline mode. Offline mode can achieve best performance. But in case of getting hosting server or other remote server support, it must be online.

It is strongly recommended to play with login account, since login user can get remote database support.

For now, modern Google Chrome could be the best browser. Later on, it will be applied to any major browsers.

- The HiWayCAD Team